

In re Appln. of Crystal et al.
Application No. 09/629,074

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a latent TGF binding protein (LTBP), latent membrane protein-1 (LMP-1), a heparin-binding neurotrophic factor (HBNF), growth and differentiation factor-5 (GDF-5), a parathyroid hormone (PTH), a fibroblast growth factor (FGF), an epidermal growth factor (EGF), a platelet-derived growth factor (PDGF), an insulin-like growth factor, a growth factor receptor, a cytokine, a chemotactic factor, a LIM mineralization protein (LMP), a leukemia inhibitory factor (LIF), a hedgehog protein, and midkine (MK).

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17. The method of claim 6, wherein the first cell and the second cell are the same cell.

18. The method of claim 6, wherein the first nucleic acid and the second nucleic acid are the same nucleic acid.

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22. A bone graft comprising at least one first cell having at least one first exogenous nucleic acid encoding at least one angiogenic protein and at least one second cell having at least one second nucleic acid encoding at least one osteogenic protein, wherein the angiogenic protein is a vascular endothelial growth factor (VEGF), a connective tissue growth factor (CTGF), VEGF2, VEGF-C, an angiopoietin, an angiopoietin homologous protein, an angiogenin, an angiogenin-2, or PlGF.

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23. The bone graft of claim 22, wherein the osteogenic protein is selected from the group consisting of a bone morphogenic protein (BMP), a transforming growth factor (TGF), a latent TGF binding protein (LTBP), latent membrane protein-1 (LMP-1), a heparin-binding neurotrophic factor (HBNF), growth and differentiation factor-5 (GDF-5), a parathyroid hormone (PTH), a fibroblast growth factor (FGF), an epidermal growth factor (EGF), a platelet-derived growth factor (PDGF), an insulin-like growth factor (IGF), a growth factor receptor, a cytokine, a chemotactic factor, a LIM mineralization protein (LMP), a leukemia inhibitory factor (LIF), a hedgehog protein, and midkine (MK).

24. The bone graft of claim 22, wherein the angiogenic protein is a vascular endothelial growth factor (VEGF).

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25. The bone graft of claim 22, which is an allograft.

Remarks

Summary of Invention

The invention is drawn to a method of enhancing bone density or formation (claims 1-18), a viral vector (claims 19-21), and a bone graft (claims 22-25).

Discussion of Office Action

The Office Action rejects claims 4, 5, 7, and 23 as including matter allegedly not described in the Specification (written description), and it rejects all pending claims as non-enabled and indefinite. The Office Action also rejects claims 1-4, 6, 7, 17, 18, 22, and 23 as